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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

10/557,837

11/21/2005

Shunsuke Shutou

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04/29/2008

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EXAMINER

LAFOND, RONALD D

ART UNIT

PAPER NUMBER

1792

MAIL DATE

DELIVERY MODE

04/29/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |                                      |   |  |
|------------------------------|--------------------------------------|---|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/557,837 | <b>Applicant(s)</b><br>SHUTOU, SHUNSUKE |  |
|                              | <b>Examiner</b><br>Ronald D. Lafond  | <b>Art Unit</b><br>1792                 |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 21 November 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 November 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)                            |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____   |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application                  |
| Paper No(s)/Mail Date <u>11/21/05, 2/21/06</u>   | 6) <input checked="" type="checkbox"/> Other: <u>IDS 5/23/06, 1/25/07, 5/21/07</u> |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3 – 8, and 12 – 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mori (Japanese Patent Application Publication Number 10 – 170921).

3. Regarding Claims 1 and 8, Mori teaches a method for producing an anisotropic film, the method comprising: disposing a film containing a photoreactive material on a substrate (see, e.g., Paragraph [0006] of PAJ Machine Translation and Drawing 1. Note that, in its broadest reasonable interpretation, a polarizing element is any element that is capable of polarizing light. In this formulation, film 13 and substrate 16 of Drawing 1 act as a polarizing element; film 15 is the photoreactive film); irradiating the film containing the photoreactive material with light through the polarizing element so as to provide an anisotropy to the film containing the photoreactive material (see Paragraphs [0007], [0009], and [0010]; although the machine translation refers to 'photosensitive substance', it is clear from Paragraph [0010] that alignment is taking place, thus making the substance/film photoreactive. Because the film is photo-aligned, it is inherently anisotropic).

4. Mori does not explicitly teach that the substrate is a polarizing element at the time that the photoreactive element is applied, but instead teaches that the polarizing plate is applied to the other side of the glass substrate to form the polarizing element after the photoreactive material has been applied to the other side of the glass substrate. However, it has been held that the selection of any order of performing process steps is *prima facie* obvious in the absence of new or unexpected results. *In re Burhans*, 154 F.2d 690, 69 USPQ 330 (CCPA 1946). Therefore,

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Claims 1 and 8 are rendered *prima facie* obvious because Mori teaches nearly the identical method claimed but with a different order of performing the steps comprising the method.

5. Regarding Claims 3 – 5, Mori teaches the method wherein the photoreactive material has reactivity to light having a wavelength of 254 nm, 300 nm, or near 365 nm (see again Paragraph [0009]), and wherein the wavelength of the radiated light is 300 nm (*ibid*).

6. Regarding Claim 6, Mori does not explicitly teach the method wherein the wavelength of the radiated light is 310 nm. However, as discussed for Claims 3 – 5, Mori does teach that wavelengths of 254 nm, 300 nm, and near 365 nm may successfully be used. That is, Mori teaches that a wavelength very near (but lower than) 310 nm may be used, and also that wavelengths of greater than 300 nm may successfully be used. It has been held that, "where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). Therefore, it would have been obvious and would have involved only routine experimentation to one having ordinary skill in the art at the time of the present invention to have modified the method taught by Mori by seeking to find the workable range of functional wavelengths between the values of 300 nm and 365 nm light taught by Mori with a reasonable expectation of success, because the Courts have held that such experimentation is not inventive.

7. Regarding Claim 7, Mori teaches the method wherein the polarizing element is a polarizer (because the polarizing element polarizes light, it is a polarizer. Furthermore, polarizing plate, which is discussed in Paragraphs [0006] and [0007], is a term in the art that is synonymous with polarizer).

8. Regarding Claim 8, Mori teaches the method wherein the film containing the photoreactive material is formed directly on the polarizing element (again, film 15 is the film containing the photoreactive material, and the polarizing element is defined as the film 13 laminated on the substrate 16).

9. Regarding Claims 12 and 13, Mori teaches the method wherein the film containing the photoreactive material further contains a non-liquid crystalline polymer that has a photoreactive

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site (see again Paragraph [0009]; because these non-liquid crystalline polymers are photoreactive, they inherently contain a photoreactive site).

10. Regarding Claims 14 and 15, Mori inherently teaches an anisotropic film produced by the production method according to Claim 1, which comprises a liquid crystalline alignment film (see Paragraph [0010]; because the film 15 orients the liquid crystalline layer, it is a liquid crystalline alignment film).

11. Regarding Claims 16 and 17, Mori also inherently teaches an optical film comprising the anisotropic film according to Claim 14. Because light is used to polarize the liquid crystalline layer and because these films are part of a liquid crystal display device, they are inherently optical films.

12. Regarding Claims 18 and 19, Mori teaches a liquid crystal display comprising a liquid crystal panel comprising a liquid crystal cell and an optical film arranged on the inner surface of the liquid crystal cell, wherein the optical film is the optical film according to Claim 17 (see Paragraphs [0011], [0015], and [0016]; and Drawing 4. The structure depicted in Drawing 4 is a liquid crystal cell comprising two polarizing elements (43 and 46) with optical anisotropic alignments films (45) on the inner surfaces thereof).

13. Regarding Claim 20, Mori inherently teaches an image display device comprising the optical film according to Claim 17, because a liquid crystal display panel (see Paragraph [0011] and Claim 1) is an image display device.

14. Claims 2, 10, 11, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mori in view of Schadt (International Patent Application Publication Number WO 99/64924).

15. Regarding Claims 10 and 11, Mori does not teach the method wherein the film containing the photoreactive material further contains a liquid crystalline compound, and wherein the liquid crystalline compound is a liquid crystalline monomer. However, Schadt teaches that it is known to incorporate liquid crystalline monomers into anisotropic films (see Page 3, lines 15 – 26; and Page 4). Specifically, Schadt teaches, in Page 3, lines 20 – 24, that "despite the distinct functions of the participating molecules [liquid crystal monomers having cross-linkable groups and photo-orientable monomers/oligomers/polymers], it has been surprisingly discovered that these

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mixtures are capable of being both oriented and cross-linked into a liquid crystal polymer. These mixtures are hence usable ... as anisotropic layers in optical components.” Schadt further teaches, in Page 4, lines 1 – 3, that “in the case of an anisotropic layer for an optical component, only one layer need be applied instead of the hitherto necessary two, thus reducing the number of processing steps.” Therefore, it would have been obvious to one having ordinary skill in the art at the time of the present invention to have modified the method taught by Mori by disposing a film containing a photoreactive material that contains a liquid crystalline monomer as taught by Schadt as the specific photoreactive film in the overall method taught by Mori in order to have gained the advantage of reducing the number of processing steps required in the production of the anisotropic film taught by Schadt with a reasonable expectation of success.

16. Regarding Claim 2, Schadt teaches the method wherein the film containing the photoreactive material is formed by coating a solution or a melt of a photoreactive material and by solidifying the solution or the melt (see Page 7, lines 22 – 27; Pages 8 and 9; and Page 10, lines 1 – 4).

17. Regarding Claim 15, Schadt teaches the anisotropic film which comprises a liquid crystalline alignment film (see previous citations; because the anisotropic film also comprises liquid crystalline polymers, it is therefore a liquid crystalline alignment film).

18. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mori in view of Sudo, et al. (United States Patent 4,437,731, hereafter Sudo).

19. Regarding Claim 9, Mori does not explicitly teach the method wherein the film containing the photoreactive material (which is an alignment layer) is formed on the polarizing element with interposition of a protective layer. Sudo teaches a device and method for producing a device comprising an alignment film used in LCDs that is disposed onto a glass substrate with the interposition of a silica protective film (see, e.g., Figure 1 and Column 4, lines 26 – 31 and lines 45 – 57). Thus, Sudo teaches that it is well known in the art to coat surfaces of glass substrates that are to be coated with alignment films with coatings that protect these glass substrates from damage (scratches, abrasions, etc.). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the present invention to have modified the method taught by

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Mori by coating the glass substrate with a protective layer that prevents scratching or abrasion of the glass because Sudo teaches that such coatings are known to be successfully used between a glass substrate and an alignment film.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ronald D. Lafond whose telephone number is (571) 270-1878. The examiner can normally be reached on M - F, 9:30 AM - 6 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Cleveland can be reached on (571) 272-1418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/R. D. L./  
Examiner, Art Unit 1792

/Michael Cleveland/  
Supervisory Patent Examiner, Art Unit 1792